

Reading the element individual tiles

The diagram shows a square element tile for Silver. Inside the tile, from top to bottom, are: "Silver", "47", "Ag", "107.87", and "107, 109".

- An arrow points from "Element Name" to "Silver".
- An arrow points from "Chemical Symbol" to "Ag".
- An arrow points from "Atomic Number (number of protons)" to "47".
- An arrow points from "Atomic Mass (units are a.m.u.)" to "107.87".
- An arrow points from "Mass Numbers (number of protons and neutrons in the nucleus of an isotope)" to "107, 109".

Annotations:

- An arrow points from "47" to the text: "Different number of protons—different element."
- An arrow points from "107, 109" to the text: "Different number of neutrons—different isotope."

How much mass would 2 atoms of silver have?

*Different number of neutrons—different isotope.
An isotope is a variety of an element with a different number of neutrons.*

Use Your Periodic Table to Answer the Following:

Find the Chemical Symbols for these Elements:

Gold: _____

Fluorine: _____

Sulfur: _____

Find the Names for these Elements:

Mg: _____

N: _____

He: _____

Find the Atomic # for these Elements:

Oxygen: _____

Boron: _____

Lithium: _____

Find the Atomic Mass # for these Elements:

H: _____

Neon: _____

Al: _____

Matching:

1. Proton: _____	a. Particles with no charge that exists in the nucleus of most atoms.	5. Atom: _____	g. Total number of protons and neutrons in the nucleus of an atom.
2. Neutron: _____	b. Center of the atom, contains most of the atom's mass.	6. Atomic #: _____	h. Number of protons in an atom; also the way the elements are numbered.
3. Electron: _____	c. Positively charged particle in the nucleus of the atom. Determines the element.	7. Atomic Mass #: _____	i. An atom with a different number of neutrons
4. Nucleus: _____	d. The smallest part of an element or molecule. Building block of all things.	8. Isotope: _____	j. Two or more elements combined.
	e. Negative particles in the nucleus of the atom.		k. Two or more atoms that are combined (can be same two atoms of same element).
	f. Negatively charged particle that exists in the space around the nucleus.		l. Number of electrons in an atom.

Everything is made of atoms. Atoms are the smallest part of matter.

Atoms are made up of 3 subatomic particles (particles smaller than the atom): *electrons, protons, and neutrons*.

On the following diagram of an atom define the parts of the atom.

Negatively charged particles; outside the nucleus; can be gained or lost to and from other atoms; very small mass; 1/2000th of a proton

electrons

Positively charged particles; in the nucleus; determine what element an atom is.

protons

[This model of the atom looks a lot like a solar system. The nucleus, which contain the protons and neutrons, in the center would be the sun. The electrons are the planets spinning around the nucleus.

Neutral particles in the nucleus; give mass to the atom, but not charge.

neutrons

nucleus

Center of the atom; contains protons and neutrons.

Count the protons to tell what element this is:

of Protons: _____ Element: _____

John Dalton in 1808 published a theory of the atom that had these important points:

- All atoms of a particular element are the same.
- Atoms of different elements have different properties, mass, and chemical reactivity.
- Atoms are not changed by chemical reactions, just rearranged in order or number.

Practice:

	# of Protons	# of Neutrons	# of Electrons	Bohr Model	Lewis Dot
$^{16}_8\text{O}$					
$^{23}_{11}\text{Na}$					
$^{27}_{13}\text{Al}$					
$^{19}_9\text{F}$					